Vale District Bureau of Land Management
Double Mountain/Twin Butte Fire Emergency Stabilization and Rehabilitation Plan
Environmental Assessment
EA No. OR-030-02-027

Decision Record

This Decision Record documents my decision to select the proposed alternative for implementation of the Double Mountain/Twin Butte Fire Emergency Stabilization and Rehabilitation Plan. This action was analyzed in the attached Environmental Assessment (EA OR-030-02-027). This proposed action is tiered to and is consistent with the Northern Malheur Management Framework Plan dated March 1983, the Southern Malheur Rangeland Program Summary dated January 1984, the Malheur County Land Use Plan, and BLM policy. Additionally, it is consistent with the proposed alternative of the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement dated April 2001.

My decision is to implement actions to seed native seed mixes to restore perennial species to areas burned during the July 2002 fires and to construct and maintain temporary fencing to protect burned and rehabilitated areas from livestock grazing.

/s/ Tom Dabbs — 9/27/2002

Tom Dabbs — Date
Acting Field Manager
Malheur Resource Area

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Finding of No Significant Impact

The Malheur Resource Area of the Bureau of Land Management, Vale District has analyzed a proposal to seed native seed mixes to restore perennial species to areas burned during the July 2002 Double Mountain and Twin Butte fires and to construct and maintain temporary fencing to protect burned and rehabilitated areas from livestock grazing.

Based on the following summary of consequences and as discussed in the environmental assessment, I have determined that the proposed action will best meet resource management objectives defined in the Northern Malheur Management Framework Plan and the Southern Malheur Rangeland Program Summary, both of which constitute the land use plan for Malheur Resource Area.

- Seeding a native mix to approximately 100 acres of burned area within the Double Mountain Fire and an additional 100 acres of burned area within the Twin Butte Fire would increase the dominance of desirable cultivars of native species. These species, including shrub species, would provide perennial ground cover and rooting to stabilize soils from wind and water transport. Additionally, establishment of desirable perennial species dominance, which includes shrub species, would more fully occupy the soil profile limiting the spread and invasion of weedy and noxious species. Thirdly, establishment of perennial herbaceous species would provide a more stable forage base within these arid rangelands to support authorized livestock use and provide wildlife habitat.

- Temporary exclusion of livestock grazing to allow recovery of desirable plant species which survived the fires and to allow establishment of seeded species would improve opportunities to maximize the success of seeding treatments and to facilitate the recovery of surviving perennial species. Retention of unburned portions of the Canyon Field and Double Mountain Pasture available for livestock grazing as authorized by permit would avoid unnecessary impacts to affected livestock operators and the local farming/ranching economy.

- Short-term negative impacts to desired perennial vegetation communities and thus watershed stability are diminished by the long-term benefits to these resource values and indirect benefits to wildlife habitat, support of local economic enterprises, and amenities.

- Impacts to critical elements of the human environment, including ten points of significance identified in 40 CFR 1508.27(b), are not determined to be in excess of limits requiring the development of an environmental impact statement.

Additionally, management direction provided in the selected proposed action alternative is more consistent with the resource management direction proposed in the soon to be completed Southeastern Oregon Resource Management Plan as compared to other alternatives analyzed.

Thus, on the basis of the information contained in this environmental assessment and all other information available, it is my determination that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment and that an environmental impact statement is not required.

s/ Tom Dabbs — 9-4-02

Tom Dabbs — Date
Acting Field Manager
Malheur Resource Area

Double Mountain/Twin Butte Fire Emergency Stabilization and Rehabilitation Plan
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EA No. OR-030-02-027

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1 Purpose of and Need for Action

1.1 A lightning caused fire originating on public land in T.21S., R.44E., W.M. Section 6 was detected on July 13, 2002. Double Mountain Fire (N243) spread to include 159 acres prior to containment at 2300 July 13 and control at 1202 July 14 (figure 1). The fire occurred exclusively on public land administered by the Vale District Bureau of Land Management. A second lightning caused fire originating on public land in T.20S., R.44E., W.M. Section 23 was detected July 26 within a few miles of the Double Mountain Fire and affected similar resource values. Twin Butte Fire (N264) spread to include 151 acres prior to containment at 1626 July 26 and control at 1600 July 27 (figure 1). Suppression activities on both fires were limited to direct attack with engines, a helicopter, one dozer, and a single engine air tanker. Access to the fires was by way of the Twin Springs and Negro Canyon roads. Due to the dry conditions and heavy fire traffic, the Negro Rock Road was severely impacted creating a number of deep dust holes which will continue to break up with proposed rehabilitation and fall recreation traffic.

The Double Mountain Fire occurred well within the boundaries of the Canyon Field of Sourdough Allotment (10404) while the Twin Butte Fire occurred well within the boundaries of Double Mountain Pasture of Dry Creek Allotment (10411). The majority of the burned areas were dominated by native sagebrush/bunchgrass vegetation communities prior to the fire, although annual species provided a significant level of competition with desirable vegetation. A portion of Twin Butte Fire also burned during the 1996 Cow Hollow although no rehabilitation actions were implemented in these areas following that fire. Native communities contained dispersed Wyoming big sagebrush (*Artemisia tridentata ssp. wyomingensis*), rabbitbrush (*Chrysothamnus sp.*), bluebunch wheatgrass (*Pseudorogneria spicata*), Thurber's needlegrass (*Stipa thurberiana*), needle and thread grass (*Stipa comata*), Indian ricegrass (*Oryzopsis hymenodies*) and Sandberg bluegrass (*Poa secunda*). Cheatgrass (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*) and clasping pepperweed (*Lepidium perfoliatum*) are present through most vegetation communities. Scotch thistle (*Onopordum acanthium*), an aggressive biennial, is also present at a number of locations in and adjacent to the fire boundaries. Rush skeletonweed (*Chondrilla juncea*), an invasive perennial noxious weed, has also been inventoried within and adjacent to the Twin Butte burned area. Where native perennial herbaceous species were limited in the understory of sagebrush/ grassland communities prior to the fires, the shrub community provided competition with annual species for available moisture and soil nutrients. Sagebrush steppe vegetation communities provided year-long or winter habitat for a number of wildlife species including big game animals, upland game species, and sagebrush dependent species.

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Interagency guidance and BLM policy as stated in the Interagency Emergency Stabilization and Rehabilitation Handbook and draft Bureau of Land Management Supplemental ESR Guidance (May 20, 2002) provides for emergency stabilization and rehabilitation where fire has an

adverse impact on vegetation, soils, and watersheds and also to minimize other adverse changes to the extent practicable, including the following:

- loss of vegetative cover for watershed protection;
- loss of soil and on-site productivity;
- loss of water control and deterioration of water quality;
- invasion of burned area by flammable annual species which increase the potential for repeated wildfire.

The area burned by Double Mountain and Twin Butte fires is in need of stabilization and rehabilitation to minimize soil movement, preserve on-site productivity, reduce the invasion and increased dominance of undesirable flammable annual plants and reduce the potential for increased dominance of existing noxious weed as well as the invasion of new species. These objectives can be met by protecting residual native vegetation communities during a period necessary for recovery of health and vigor and establishing desirable perennial plant cover to replace annual vegetation communities to the extent possible. This environmental assessment analyzes the benefits and risks of implementing rehabilitation actions to establish native perennial vegetation cover as compared to establishment of desirable nonnative perennial species. It also includes a limited rehabilitation and a no action alternative.

1.2 In addition to other National Environmental Policy Act requirements, this environmental assessment was completed to ensure that treatments identified in the Emergency Stabilization and Rehabilitation Plan are consistent with the applicable land use plan objectives and decisions. Seeding and planting of grass, forb and shrub species as proposed in the preferred alternative is consistent with the following recommendations of the Northern Malheur Management Framework Plan dated March 14, 1983:

- SWA 3.2/4.1 Implement a vegetation manipulation program on approximately 80,000 acres of low-elevation (below 3,000 feet) lacustrine sediment material on the public land by reseeding an adapted perennial grass that will help protect these soils from wind and water actions and will also extend the wildfire resistance of the plant communities into the growing season.

- W/L 1.1 Seed or plant seedlings of suitable shrub and/or tree species on select sites within areas designated “C” on the Habitat Opportunity overlay. Species under consideration should include juniper, curl leaf mountain mahogany, aspen, cottonwood, willow, choke and bitter cherry. Livestock grazing of the treated areas should be prohibited for a minimum of two growing seasons and then allow spring season use there after.

- W/L 10.1 Within areas marked "F" on overlay, increase the survival of palatable browse species reproduction by 20% from the existing 5% (estimated) by 1990 through the initiation of livestock grazing systems utilizing "prescription" grazing toward a vegetative objective. Coordinated AMP/HMP planning will be required.

- W/L 10/2 Future seedings should include a variety of grasses, forbs, and browse (shrub) species in the seeding mixture. A mixture of approximately ½ grasses, ¼ forbs, and ¼ browse - each being represented by from 4 to 6 species - is considered ideal.

- W/L 10.4 Wild fire should be aggressively suppressed in critical browse and/or cover habitats.

- W/L 11.4 Attain and/or maintain a vegetative composition of 55% grasses, 25% forbs, and 20% shrubs.

Additionally, implementation of seeding practices to attain desired perennial vegetation cover and to protect recovering vegetation resources following fire are consistent with objectives and proposed management actions identified in the Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement (USDI-BLM 2001), analysis leading to a replacement land use plan for Malheur and Jordan Resource Areas of Vale District BLM.

The Ironside EIS Area Rangeland Program Summary (USDI-BLM 1984), Freezeout Allotment Management Plan implemented in 1989, and the Dry Creek Allotment Management Plan implemented in 2002 do not provide specific management direction for seeding and establishment of shrub species though do identify management objectives to improve or maintain upland ecological conditions within native pastures.

Temporary fencing to ensure short-term exclusion of livestock from burned areas pending establishment of seed species and recovery of residual vegetation is also consistent with the Northern Malheur Management Framework Plan and affected activity plans.

1.3 Decisions to be made as a result of information provided in this environmental assessment include whether to seed portions of the Double Mountain and Twin Butte fires and if so, what species mixes would be planted to best meet resource management objectives. Additionally, this environmental assessment will provide information used to decide what practices would be implemented, if any, to exclude livestock impacts, herbivory and other impacts which limit recovery and establishment of desired vegetation resources following the fires and seeding actions. No other federal, state or local government is involved in the NEPA analysis of the

proposed actions, beyond issue identification, review, and comment on content of the draft document.

1.4 Internal scoping of issues relevant to the need for rehabilitation actions and protection from livestock impacts identified the need to ensure vegetation communities be managed to attain desired future conditions subsequent to the fire, including meeting riparian, upland vegetation, watershed, special status species, and cultural resource management objectives presented in the land use plan. The level of controversy of potential rehabilitation actions implemented is moderate with two regional environmental organizations requesting to be informed of proposed actions in Sour Dough and Dry Creek grazing allotments. Additionally, the Oregon Department of Fish and Wildlife is typically informed of proposed fire rehabilitation actions as is the Malheur County Court. Memoranda of Understanding between BLM and a number of Tribes (The Burns Paiute Tribe, The Confederated Tribes of the Umatilla Reservation) are in place to define coordination.

1.5 Proposed protection of vegetation resources and seeding would be implemented as annual workload for BLM staff and/or through contract with private entrepreneurs. Temporary fencing would be maintained by livestock operators benefitting from retaining the remainder of Canyon Field and Double Mountain Pasture available for grazing.

2 Alternatives Including the Proposed Action

2.1 Alternatives considered and analyzed include the proposed action, a nonnative seeding alternative, a limited rehabilitation alternative, and a no action alternative. Herbicide treatment of burned areas with herbicides which are specific to annual species such as Oust or Plateau to control competition during germination and establishment of perennial seeded species was considered though not analyzed since use of Oust is not consistent with an injunction on the use of herbicides on public lands in Oregon and Washington and Plateau is not licensed for use in rangeland systems. Additionally, consideration of the use of locally collected seed which may be more specifically adapted to 3000 foot elevation shrub/steppe rangelands in Northern Malheur County was not completed due to the limited availability of adequate seed. A summary of treatments analyzed by alternative is presented in Table 1.

Table 1: Summarized treatments by alternative

Action \ Alternative	Proposed Action	Nonnative Seeding	Limited Rehab	No Action
Double Mountain Fire (N243)				
Native seeding (acres)	100	0	0	0
Nonnative seeding (acres)	0	100	0	0

Seedling shrub planting (acres)	50	0	0	0
Aerial sagebrush seeding (acres)	159	0	0	0
Tire-packing sagebrush seeding (acres)	50	0	0	0
Temporary fencing (miles)	2.5	2.5	2.5	0
Temporary livestock exclusion (acres)	283	283	283	21,528
Monitoring	Yes	Yes	Yes	No
Twin Butte Fire (N264)				
Native seeding (acres)	100	0	0	0
Nonnative seeding (acres)	0	100	0	0
Seedling shrub planting (acres)	50	0	0	0
Aerial sagebrush seeding (acres)	151	0	0	0
Tire-packing sagebrush seeding (acres)	50	0	0	0
Temporary fencing (miles)	2.75	2.75	2.75	0
Temporary livestock exclusion (acres)	215	215	215	12,665
Monitoring	Yes	Yes	Yes	No

2.2 **Alternatives Analyzed**

2.2.1 **Proposed Action:** Approximately 100 acres of public land within Double Mountain fire boundaries and 100 acres within Twin Butte fire boundaries would be seeded using rangeland drills during the fall of 2002 or spring of 2003 to a native mixture to further strengthen residual native perennial vegetation and provide additional competition to annual and weedy species establishment. The remaining 59 acres of public land within the Double Mountain fire boundary and 51 acres of public land within the Twin Butte fire boundary would not be seeded due to steepness of slopes. The locations of proposed treatments are presented in Figures 2 and 3.

Areas seeded to the native mix would include flat and moderately sloped topography. The native mixture would include cultivars of bluebunch wheatgrass, basin wildrye (*Leymus cinereus*),western wheatgrass (*Pascopyrum smithii*), dry-land alfalfa (*Medicago sp.*), small burnet (*Sanguisorba minor*), Lewis flax (*Linum perenne var. lewisii*), hawksbeard (*Crepis sp.*), bitterbrush (*Purshia tridentata*), and/or fourwing saltbush (*Atriplex canescens*) at a

drilling rate of approximately 9 pounds per acre (35 seeds per square foot) (Table 2). All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival.

Table 2: Proposed alternative seed mixes for the Double Mountain/Twin Butte Emergency Stabilization and Rehabilitation Plan

Species	Pounds Per Acre	Seeds per ft^2	Total Pounds
Native seeding* ***100 acres Double Mountain Fire*** ***100 acres Twin Butte Fire***			
Secar Bluebunch Wheatgrass	2.5	8.0	500
Goldar Bluebunch Wheatgrass	3	9.6	600
Magnar Basin Wildrye	2	6.0	400
Arriba Western Wheatgrass	0.5	1.3	100
Ladak Alfalfa	0.4	1.9	80
Small Burnet	0.25	0.3	50
Apar Lewis Flax	0.25	1.7	50
Hawksbeard	0.1	1.1	20
Totals	9	29.9	1,800
Shrub Species ** ***159 acres Double Mountain Fire*** ***151 acres Twin Butte Fire***			
Wyoming Big Sagebrush	1 lb bulk (0.1 lbs pls)		310 lbs bulk

* Other varieties of native grass species listed or other forbs may be substituted based on seed availability or cost. Bitterbrush and/or fourwing saltbush may be added to drilled mixtures.
** Sagebrush seed may include up to 25 percent basin big sagebrush seed, dependent of seed availability and cost.

All public land acres of the burned area would be broadcast seeded, on completion of drilling, with local Wyoming and/or basin big sagebrush at a rate of 0.1 pounds pure live seed (pls) per acre (approximately 1 pound per acre bulk). Approximately 50 acres of accessible portions of the sagebrush seeding within each fire would be tire-packed to better ensure seed contact with the soil during germination and up to 50 acres of the burned area within each fire would be planted with 1-0 seedlings of additional shrub species including bitterbrush, four-wing saltbush, shadscale, and/or sagebrush to provide nurse stock for future colonization of the site by these

shrub species. Shrub seedlings would be planted at a rate of approximately 50 seedlings per acre as available in the spring of 2003 and 2004 utilizing emergency fire rehabilitation funds and in later years as other funding sources are available.

Due to the location of each fire internal to established pastures, approximately 2.5 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by Double Mountain Fire and approximately 2.75 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by Twin Butte Fire. The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established.

Approximately 16 miles of the Negro Rock Road would be bladed using fire suppression funds when adequate soil moisture is present, likely spring 2003, to restore the road bed surface to numerous dust holes.

No repairs to permanent fence are required since both fire were internal to the specified pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring. Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

2.2.2 **Nonnative Seeding Alternative:** Approximately 100 acres of public land within Double Mountain fire boundaries and 100 acres within Twin Butte fire boundaries would be seeded with a nonnative mixture, using rangeland drills during the fall of 2002 or spring of 2003. Those areas seeded would include flat and moderately sloped topography. The nonnative mixture would include cultivars of crested wheatgrass (*Agropyron cristatum*), basin wildrye, western wheatgrass, dry-land alfalfa, small burnet, Lewis flax, and hawksbeard at a drilling rate of approximately 9 pounds per acre (approximately 30 seeds per square foot) (Table 3). All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival. The remaining 59 acres of public land within the Double Mountain fire boundary and 51 acres of public land within the Twin Butte fire boundary would not be seeded due to steepness of slopes. The locations of proposed treatments are presented in Figures 2 and 3.

Due to the location of each fire internal to established pastures, approximately 2.5 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by Double Mountain Fire and approximately 2.75 miles of temporary fencing would be proposed to exclude livestock grazing from areas burned by Twin Butte Fire. The burned area would be

closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established.

Approximately 16 miles of the Negro Rock Road would be bladed using fire suppression funds when adequate soil moisture is present, likely spring 2003, to restore the road bed surface to numerous dust holes.

Table 3: Nonnative alternative seed mixes for the Double Mountain/Twin Butte Emergency Stabilization and Rehabilitation Plan

Species	Pounds Per Acre	Seeds per ft^2	Total Pounds
Nonnative seeding * ***100 acres Double Mountain Fire*** ***100 acres Twin Butte Fire***			
Fairway Crested Wheatgrass	5	20.1	1,000
Magnar Basin Wildrye	2	6.0	400
Arriba Western Wheatgrass	1	2.6	200
Ladak Alfalfa	0.4	1.9	80
Small Burnet	0.3	0.4	60
Apar Lewis Flax	0.3	2.0	60
Totals	9	33.0	1,800

* Other varieties of nonnative grass species listed or other forbs may be substituted based on seed availability or cost.

No repairs to permanent fence are required since both fire were internal to the specified pastures.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring. Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

2.2.3 **Limited Rehabilitation Alternative:** No seeding of perennial grass, forb or shrub species would be considered. Desirable perennial species which survived the recent two fires would be protected with the construction and maintenance of approximately 2.5 miles of temporary fencing proposed to exclude livestock grazing from areas burned by Double Mountain Fire and approximately 2.75 miles of temporary fencing proposed to exclude livestock grazing from

areas burned by Twin Butte Fire. The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring. Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

2.2.4 **No Action Alternative:** No emergency rehabilitation would be completed. Revegetation of the burned areas would be allowed to occur from seed and plant materials which remain on site. Livestock would be excluded from Canyon Field and Double Mountain pastures for two growing seasons. No monitoring of the burned area would be completed beyond that scheduled prior to the fire.

3 Affected Environment

3.1 This section presents relevant resource components of the existing environment, that is the baseline environment.

3.2 **Vegetation, Soils and Watershed:** Native shrub steppe vegetation communities contained Wyoming big sagebrush, rabbitbrush, bluebunch wheatgrass, Thurber's needlegrass, and Sandberg bluegrass prior to the 2002 fires. Areas adjacent to livestock water sources outside the fire boundary and other areas of previous disturbance were dominated by annual and biennial herbaceous species including cheatgrass, medusahead rye (*Taeniatherum caput-medusae*), tumble mustard, Russian thistle (*Salsola kali*), and Scotch thistle. Where native perennial herbaceous species were limited or devoid in the understory of sagebrush/ grassland communities, the shrub community provided competition with annual species for available moisture and soil nutrients. Microbiotic crusts composed of cyanobacteria, green algae, lichens, mosses, microfungi, and/or other bacteria occupy many open spaces between higher plants.

Approximately 4,100 acres of depleted rangeland at lower elevation north of the fires within Sourdough and Dry Creek allotments was seeded to crested wheatgrass with varying levels of reestablishment of big sagebrush as a result of the Vale Project, fire rehabilitation, and other rehabilitation efforts since the early 1960's. The 8,400 acre Double Mountain Brush Control located immediately east of the Twin Butte Fire within Double Mountain Pasture was sprayed in 1965 to control sagebrush and release perennial herbaceous species. Much of that same area was seeded to native perennials following the 1996 Cow Hollow Fire.

The soils found in the area of the Twin Butte fire were surveyed and described in Oregon's Long Range Requirements for Water 1969, Appendix I-11, Malheur Drainage Basin. The Nyssa series and Unit 94 occur on 7 to 20 percent slopes. Unit 75 occur on 2 to 12 percent slopes. Microbiotic crusts have not been inventoried, but are known to exist throughout the burned area.

The Nyssa series consists of moderately deep, well drained soils with a weakly cemented pan formed on higher terraces along the Snake River underlain by lacustrine materials or old alluvium and mantled by thin loess. The terraces are dominantly gently sloping but range to steeply sloping where dissection has occurred. This soil occurs mixed with Unit 94 land unit. Native vegetation consists mostly of big sagebrush, Thurber's needlegrass, bluebunch wheatgrass, and Atriplex spp. This soil has a high potential for range seeding. This soil makes up approximately 60% of the burned area.

Unit 94 is a miscellaneous land unit consisting of gently sloping to moderately steep raw old lake sediments where active erosion has prevented soil formation. Vegetative cover is very sparse. Soils of this unit are unsuited for rangeland seeding. This soil makes up approximately 25% of the burned area.

Unit 75 soils are loamy, shallow, very stony, rocky, well drained soils over basalt, rhyolite, or welded tuff. These soils occur on gently undulating to rolling lava plateaus and some very steep faulted and dissected terrain. Native vegetation consists mostly of big sagebrush, low sagebrush, bluebunch wheatgrass and Sandberg bluegrass. Stones limit this soils potential for rangeland seeding. This soil makes up approximately 15% of the western edge of the burned area.

Soils in the area of the Double Mountain fire are Unit 75, Unit 76 and Unit 60 on 12 to 20 percent slopes. Microbiotic crusts have not been inventoried, but are known to exist throughout the burned area.

Unit 75 soils are described above. This soil makes up approximately 95% of the burned area.

Unit 76 soils are shallow, clayey, very stony, well drained soils over basalt, rhyolite, or welded tuff. These soils occur on gently undulating to rolling lava plateaus and some very steep faulted and dissected terrain. This soil occurs mixed with Unit 60 soils in the southern end of the burn. Native vegetation consists mostly of big sagebrush, low sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. Stones limit the potential of this soil for rangeland seeding. This soil makes up approximately 4-5% of the burned area.

The area has Unit 60 soils that are moderately fine textured, well drained soils underlain by old lacustrine sediments. They occur on gently sloping to hilly uplands mainly in conjunction with

Unit 76 and Unit 98 soils. Native vegetation consists mostly of big sagebrush, rabbitbrush, bluebunch wheatgrass, and Sandberg bluegrass. This soil has a high potential for range seeding. This soil makes up approximately 1% of the burned area.

No perennial water sources lie within the proposed treatment area. Drainage is to the north into Cow Hollow, Negro Rock Canyon, Malheur River , and Snake River.

3.3 **Noxious Weeds:** Scotch thistle, an aggressive biennial, is present at a number of locations within the fire boundary. Rush skeletonweed, an invasive perennial noxious weed, is known to be present immediately north of Twin Butte Fire. Whitetop or hoary cress (*Cardia sp.*) another perennial noxious weed, is also present adjacent to the burned area. Medusahead rye, an aggressive annual grass, is present in isolated areas of both fires.

3.4 **Livestock Grazing:** Double Mountain Fire is entirely within the 21,528 acre Canyon Field of Sourdough Allotment (10404). Twin Butte Fire is entirely within the 12,665 acre Double Mountain Pasture of Dry Creek Allotment (10411). Three permittees are authorized to graze livestock in the community Sourdough Allotment, although only two currently use Canyon Field in their grazing rotation. Two permittees are authorized to graze livestock in Dry Creek Allotment, both of which currently use Double Mountain Pasture in their grazing rotation. Active animal unit months (AUMs) within the 78,910 acre Sourdough Allotment and the 68,252 acre Dry Creek Allotment are listed below: No grazing authorization for use in Sourdough or Dry Creek allotments is currently held in suspension.

Permittees authorized to graze within Sourdough Allotment

Frank Shirts (sheep)	266 AUMs
Loring Land Company (cattle)	5901 AUMs
Calvin Haueter (cattle)	371 AUMs

Permittees authorized to graze within Dry Creek Allotment

Frank Shirts (sheep)	266 AUMs
Probert Family Trust (cattle)	4786 AUMs

Sourdough and Dry Creek allotments were created with the division of Freezeout Allotment in 2002 and are part of the Harper Basin Management Unit. Sourdough and Dry Creek allotments are located south of Vale, Oregon. Boundaries of these two adjoining allotments are approximately defined by Sand Hollow and Cow Hollow to the north, the Twin Springs Road to the east, Dry Creek to the south, and Freezeout Ridge to the west.

Freezeout Allotment was classified as "I" (Improve) category allotments for management in the 1984 Southern Malheur Rangeland Program Summary Record of Decision. The season of use authorized within Sourdough Allotment by the allotment management plan is between April 1

and December 31 annually with a deferred rotation system. The season of use authorized within Dry Creek Allotment by the allotment management plan is between October 1 and March 31 annually.

3.5 **Wildlife:** The proposed treatment area is within year-long and winter range for mule deer and pronghorn antelope. Other wildlife species found in the area include neotropical migratory song birds, small mammals and reptiles. Brush control and previous wildfires eliminated shrub dominance from a number of areas within the pastures, leading to a dominance by annual and weedy species and the loss of winter cover and browse. Limited recovery of shrub species has occurred. Wildlife depredation on adjacent private crop lands continues to be identified as a problem.

No known wildlife species listed as threatened or endangered under the Endangered Species Act of 1973 are present within or adjacent to Sourdough or Dry Creek allotments. Special status wildlife species found in the area include burrowing owls (BLM sensitive species). This species nests in annual vegetation habitat typical of the low elevation bottom in the treatment area. A number of sage grouse leks and presumed nesting and brood rearing habitats are located within adjoining pastures west of the burned areas. The nearest lek is approximately five mile west at Kane Springs.

3.6 **Recreation and Visual Resources:** Dispersed outdoor recreation in and near the proposed fire rehabilitation area consists primarily of off highway vehicle usage and hunting of upland birds and big game animals. Some dispersed general sightseeing occurs. The burned areas are within a visual resource management Class IV area (Proposed Southeastern Oregon Resource Management Plan, 2001). The objective of Class IV is to provide for management activities that require major modification of the landscape. These management activities may dominate the view and become the focus of viewer attention. However, every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.

3.7 **Cultural Resources and Paleontology**

Native American Lifeways: Early prehistory in this area begins with the Clovis and Folsum cultures characterized by big game hunters representing the PaleoIndian period. The Archaic Period which ended at the time of contact with white European explorers represents the climax of cultural development with the lithic technology characterized by seven different projectile point styles and the development of the seasonal round to hunt and gather plant resources as they became available. The preferred lithic material for projectile points and lithic artifacts shifts from basalt to obsidian. The archaeological evidence suggests a rather stable cultural environment where changes reflect the relative intensity of certain activities. The final stage of

northern Great Basin prehistory, beginning about 1000 A.D., was the occupation of this area by the Numic speaking Northern Paiute.

Settlements of the Northern Paiute were of two types: village and camps. Winter villages of up to fifty huts have been reported, but generally the winter villages consisted of small, unstable groups of about three families located near a major lake or river, while seasonal camps were located wherever there was water and food. Living structures were typically a fence-like windbreak of sagebrush for a temporary or summer camp with a tree or brush sunshade or domed wickiup for both winter and summer use. The subsistence economy of the Northern Paiute was strongly oriented toward the utilization of more than 50 plant species because these provided a more abundant and dependable than fowl, fish or mammals. However, when mammals were available, almost all the parts were utilized. Mammals provided skins, furs, tools and many other by-products of aesthetic and practical value. Insects were often eaten, beetles, grasshoppers, locusts, crickets, ants and caterpillars were consumed, as well as most eggs and larva.

Historic Lifeways: Exploration into this area began with the expeditions of John Jacob Aster, after he heard the stories from the Lewis and Clark Expedition of 1804-1806. The first written observations of southeastern Oregon can be found in journals kept by men involved in the expansion of fir trapping territory. In 1811, Wilson Price Hunt's party crossed the Snake River in the area of the Weiser River. In 1812, Crooks and Robert Stuart were sent east, backtracking the route of their westward journey. They camped opposite the Weiser River on August 13, 1812. Journal excepts show that they had crossed the Malheur and the Owyhee Rivers. With the increase in the number of settlers and miners arriving, as well as traveling through the area, came an increased pressure on the Native American way of life. Conflicts over the available resources arose between miners and settlers and the Native Americans. It was up to the military to protect the settlers and miners. From 1864 to 1867, numerous military maps were made, roads were constructed and posts were established throughout eastern Oregon. It was during the 1880s, that settlers increasingly came to southeast Oregon, and small communities were established near reliable water sources. The coming of the railroad also brought a new method of moving livestock to the stockyards. Both cattle and sheep raising prospered during the 1890s. Sheep outfits tended to be small and numerous, while cattle operations were larger and fewer. The Taylor Grazing Act of 1934 along with the Great Depression led to an abrupt and permanent drop in the number of sheep, while fostering a long-term increase in the number of beef cattle, which has continued to the present.

Recent Cultural Resource Surveys: In 1996, a lightning caused fire burned 31,294 acres south of the 2002 Twin Buttes fire location and east of the Double Mountain Fire location. As a result of proposed rehabilitation effort after the 1996 fire extensive cultural resource surveys were conducted both under contract with Washington State University and by BLM personnel under the direction of the Cultural Resource Specialist. The cultural resource survey along the

ridge lines to the south and southeast of the 2002 Twin Butte fire area located one isolated artifact. The survey of Sagebrush Gulch and north located 6 isolates and 3 prehistoric sites within ½-1 mile of the 2002 Double Mountain fire.

Paleontology: Fossil flora and faunal localities in the area are Miocene in age and are usually part of the Deer Butte or Grassy Mountain formations. During the Miocene, this area was inundated by Pluvial Lake Idaho which extended from Twin Falls, Idaho north to Baker along the Snake River and inundating the Owyhee, Malheur and Snake River drainages. Fossil flora and faunal localities have been identified within five miles of the Double Mountain fire. The Deer Butte formation in this area has yielded Miocene age vertebrates including a variety of shrews and moles, kangaroo rat, mice, beaver, carnivores and hoofed mammals including horse, rhino, antelope, and camel.

3.8 **Special Status Plants:** No plant species listed or proposed for listing under the Endangered Species Act of 1973 are known to be present within the area burned. Mulford's milkvetch (*Astragulus mulfordiae*), a species listed by the State of Oregon as endangered, has been located on a number of sites providing sandy habitats immediately north of Twin Butte Fire. Similarly, Malheur forget-me-not *(Hackelia cronquistii*), another species listed by the State of Oregon as threatened, has been located on north facing slopes immediately north of the fire boundary. No ground disturbing actions are proposed within the habitats of either species. No other special status plant species are known or suspected within the immediate area of either proposed project site.

3.9 **Climate/Topography:** Double Mountain and Twin Butte fires occurred in rolling hills where the elevation above sea level ranges from 3000 feet to 3250 feet. Semi desert shrub steppe vegetation communities result from cold winters and hot dry summers. The long term average annual precipitation measured at Vale, Oregon (14 miles northwest of the fire boundary) is 9.77 inches (National Oceanic and Atmospheric Administration Climatological Data Annual Summary; Oregon 1999). Precipitation occurs primarily as snow fall during the winter with occasional mid-summer thunder storms.

Neither the proposed actions nor any of the alternatives will impact climate or topography.

3.10 **Other Mandatory Elements:** The following mandatory elements are either not present or would not be affected by the proposed action or alternatives:

- Air Quality
- Wild Horse/Burro Management
- Native American Religious Concerns
- Hazardous Wastes
- Prime or Unique Farmlands
- Wetlands/Riparian/Flood Plains

- Wild and Scenic Rivers
- Wilderness or Wilderness Study Areas
- Areas of Critical Environmental Concern; Research Natural Areas
- Environmental Justice
- Actions to Expedite Energy-Related Projects (Executive Order No. 13212 of May 18, 2001)

4 Environmental Consequences

4.1 This chapter is organized by alternatives to illustrate the differences between the proposed action and other alternatives including the no action alternative.

4.2 **Proposed Action Alternative:** Consequences of implementing the proposed alternative, native drill seeding of approximately 200 acres, shrub establishment, and temporary fencing to exclude livestock grazing, would result as summarized in the following sections.

4.2.1 **Vegetation, Soils and Watershed:** Drilling of native seed on 200 acres of public land would provide an opportunity and seed source for a more stable perennial vegetative cover over much of the burned area, especially within areas recently dominated by annual species. With successful establishment of seedings, native perennials would replace more flammable annuals, somewhat reducing the frequency and severity of wildfire. Establishment of perennial grasses, forbs and shrubs would restore ecological function to the portions of Canyon Field and Double Mountain Pasture which burned. Establishment of sagebrush, fourwing saltbush and/or bitterbrush would provide vegetative community diversity and restore structure to the vegetative community that has been lost to the Double Mountain, Twin Butte, and other recent fires in this area. Risk of poor establishment of native species in areas previously dominated by annual species, especially in the event of limited soil moisture in the spring of 2003, would be greater than the similar risk of planting more competitive nonnative species such as crested wheatgrass which is adapted to drier conditions and is tolerant of greater grazing impacts. Wildlife habitat values and species diversity would be greater with establishment of native species as compared to nonnative species resulting from rehabilitation actions.

Temporary exclusion of livestock from a portion of Canyon Field and Double Mountain Pasture, including the burned area and areas seeded and/or planted, would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

Soil erosion would increase in the short term as a result of loss of vegetative cover from the fires. Soil erosion rates would decrease as perennial species, including grasses, forbs, and shrubs which in combination fill much of the soil profile with roots, gain dominance of the site in years subsequent to seeding. The annual species which previously vegetated some of the area

provide much less protection of the soil surface and profile than would desirable perennial species. With implementation of this alternative and successful establishment of desired species, erosion rates would decrease further than under the no action alternative due to establishment of perennial species. Perennial vegetation would reduce soil erosion and down stream sedimentation by providing improved protection of the soil surface and by reducing the frequency of wildfire. Establishment of perennial vegetation would also be beneficial to recovery and reestablishment of microbiotic crusts since dominance by exotic annual vegetation exclude these species.

4.2.2 **Noxious weeds:** Establishment of perennial species would help prevent the potential for spread and takeover of the site by noxious weeds, particularly rush skeletonweed, Scotch thistle, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile with roots of desirable perennial species as compared to shallow rooted perennial grasses and forbs alone. Full occupation of the soil profile with roots of desirable species would provide additional competition to reduce dominance by deep rooted weedy species. Establishment of diverse perennial vegetation communities including grasses, forbs, and shrubs would help prevent or minimize the proliferation and invasion of noxious weed species within the burned area and adjacent to roads impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads would limit transport of seed to new sites within the burn area and offsite. Increased inventory for noxious weeds and appropriate treatment will preclude their spread and establishment into niches opened by the fire.

4.2.3 **Livestock Grazing:** Livestock would be excluded from burned portions of affected pastures and adjoining areas through at least two growing seasons and until seeded species are established. These areas comprise approximately 283 acres (1.3 percent) of Canyon Field and 215 acres (1.7 percent) of Double Mountain Pasture.

Scheduled grazing within Canyon Field, as defined in the allotment management plan with a deferred system, identifies an estimated average annual use of 896 AUM's by cattle. This use represents approximately 14 percent of the combined authorized use of 6272 AUM's in Sourdough Allotment by Loring Land Company and Calvin Haueter. Thus, the proportionate loss of forage productivity from the area burned represents less than one percent of these two operators authorization. Sheep use is less well defined with terms of the permit requiring that camps be moved at least every fifth day to prevent repeat grazing of any area. Although Canyon Field is one of a number of pastures used by sheep, it is anticipated that the loss of use of approximately 1.3 percent of this pasture would not affect Frank Shirt's authorized use of 266 AUM's in Sourdough Allotment.

Similarly, scheduled grazing within Double Mountain Pasture, as defined in the allotment management plan, identifies an estimated average annual use of 1766 AUM's by cattle. This use represents approximately 37 percent of the authorized use of 4786 AUM's in Dry Creek

Allotment by Probert Family Trust. Thus, the proportionate loss of forage productivity from the area burned represents less than one percent of this operators authorization. Sheep use is less well defined with terms of the permit requiring that camps be moved at least every fifth day to prevent repeat grazing of any area. Again, Double Mountain Pasture is one of a number of pastures used by sheep, it is anticipated that the loss of use of approximately 1.7 percent of this pasture would not affect Frank Shirt's authorized use of 266 AUM's in Dry Creek Allotment.

Livestock grazing schedules would be adjusted short term within the flexibility of the allotment management plans to continue the authorization of livestock grazing in Sourdough and Dry Creek allotments while continuing to meet management objectives.

In the long term, positive benefits would accrue to livestock operators due to the establishment of perennial vegetation. An increased and more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

4.2.4 **Wildlife:** The proposed action would result in the reestablishment and maintenance of higher quality and greater quantity of year-long forage, browse, and cover for mule deer and pronghorn antelope within the project area with the establishment of desirable herbaceous and shrub species. Structural habitat for sagebrush dependent species, including potentially sage grouse, would be restored in the long term with reestablishment of desirable shrub species. Foraging and habitat values provided by perennial herbaceous species would be improved. Timing, season, and intensity of big game depredation on private crop lands adjacent to the burned area would be expected to be changed with establishment of desired herbaceous and shrub species as animals choose forage sources as well as thermal and hiding cover.

4.2.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. In the event that rehabilitation activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be enhanced with development of desirable perennial plant species and vegetation structure. Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class IV. Visual evidence of drilled seeding would remain evident long term, though would be obscured with development of sagebrush cover over time.

4.2.6 **Cultural Resources:** A Class III cultural resources survey would be conducted prior to surface disturbing activities. Recorded sites will be avoided as appropriate. A survey for paleo resources would also be conducted prior to surface disturbing activities. Paleo resources located, depending on the nature and extent of the fossil locality, would either be flagged and avoided during rehabilitation activities or the fossils would be recovered prior to rehabilitation activities.

4.2.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during rehabilitation actions, mitigation actions would be implemented to avoid impacts which would contribute for the need for listing. Use of native species adjacent to Malheur forget-me-not and Mulford's milkvetch habitats would better limit weed establishment and invasion of special status plant sites.

4.3 **Nonnative Seeding Alternative:** Consequences of implementing the nonnative seeding alternative, nonnative drill seeding of approximately 200 acres and temporary fencing to exclude livestock grazing, would result as summarized in the following sections.

4.3.1 **Vegetation, Soils and Watershed:** Drilling of nonnative seed on 200 acres of public land would provide an opportunity and seed source for a more stable perennial vegetative cover over much of the burned area, especially within areas recently dominated by annual species. With successful establishment of seedings, desirable nonnative perennials would replace more flammable annuals, somewhat reducing the frequency and severity of wildfire. Establishment of nonnative perennial grasses would partially restore ecological function to the portions of Canyon Field and Double Mountain Pasture which burned. Depending on natural regeneration of shrub species, primarily Wyoming big sagebrush, would further limit restoration of ecological function in the short term (less than 20 years). Wildlife habitat values and species diversity would be greater with establishment of desirable nonnative perennial grasses as compared to annual species.

Temporary exclusion of livestock from a portion of Canyon Field and Double Mountain Pasture, including the burned area and areas seeded, would allow recovery of residual desirable species and establishment of seeded species without impacts from sheep and cattle grazing.

Soil erosion would increase in the short term as a result of loss of vegetation cover from the fire. Soil erosion rates would decrease as perennial grass gains dominance of the site in years subsequent to seeding. The annual species which previously vegetated the area provide much less protection of the soil surface than would desirable perennial species. Establishment of perennial vegetation would also be beneficial to recovery and reestablishment of microbiotic crusts, since dominance by exotic annual vegetation exclude these species.

4.3.2 **Noxious weeds:** Establishment of perennial species would help prevent the potential for spread and takeover of the site by noxious weeds, particularly rush skeletonweed, Scotch thistle, and whitetop. Delaying the establishment of a diverse shrub component through natural seeding from surrounding vegetation communities, a process which could take up to 30 years in these Wyoming big sagebrush communities, would allow deep rooted weed species the opportunity to access soil moisture below the reach of shallow rooted perennial grasses and

forbs alone. Establishment of perennial vegetation communities composed of primarily nonative grass would partially prevent or minimize the proliferation and invasion of noxious weed species within the burned area and adjacent to roads impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads would limit transport of seed to new sites within the burn area and offsite. Increased inventory for noxious weeds and appropriate treatment will preclude their spread and establishment into niches opened by the fire.

4.3.3 **Livestock Grazing:** Livestock would be excluded through at least two growing seasons and until seeded species are established from burned portions comprising less than two percent of Canyon Field and Double Mountain Pasture. Impacts would be as identified in the proposed alternative.

In the long term, positive benefits would accrue to livestock operators due to the establishment of perennial nonnative grass communities. An increased and more stable forage base would be established, allowing for increased livestock gains and more stable livestock operations over the long term.

4.3.4 **Wildlife:** Habitat values provided by nonnative seedings and limited shrub reestablishment would be somewhat improved for mule deer, pronghorn antelope, and sagebrush dependent species as compared to a vegetation community dominated by annual species. Timing, season, and intensity of big game depredation on private crop lands adjacent to the burned area would be expected to be unchanged as animals chose forage sources as well as thermal and hiding cover.

4.3.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. In the event that rehabilitation activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be enhanced with establishment of nonnative grass and perennial forb species . Surface impacts of the proposed rehabilitation efforts do not exceed management objectives for visual resource Class IV. Visual evidence of drilled seeding would remain evident long term.

4.3.6 **Cultural Resources:** A Class III cultural resources survey would be conducted prior to surface disturbing activities. Recorded sites will be avoided as appropriate. A survey for paleo resources would also be conducted prior to surface disturbing activities. Paleo resources located, depending on the nature and extent of the fossil locality, would either be flagged and avoided during rehabilitation activities or the fossils would be recovered prior to rehabilitation activities.

4.3.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during rehabilitation actions, mitigation actions would be implemented to avoid impacts which would contribute for the need for listing.

4.4 **Limited Rehabilitation Alternative:** Consequences of implementing the limited rehabilitation alternative; temporary fencing to exclude livestock grazing would result as summarized in the following sections.

4.4.1 **Vegetation, Soils and Watershed:** Vegetative structural and species diversity would remain low in many of the areas dominated by annual species. Annual species would continue to dominate a number of sites within the burn with a mat of cheatgrass and other annual species seed. The potential for invasion of burned areas and other sites of soil disturbance opened to noxious weed seedling establishment would remain high. Potential for repeated wildfire and rapid spread would be high. The cumulative effects of past and future wildfire adjacent to this burn would cause a continued loss of vegetative diversity and structure which would accelerate over time as more of these low elevation ranges are retained in grassland dominated vegetation communities and eventually converted to cheatgrass dominated grasslands.

Temporary exclusion of livestock from a portion of Canyon Field and double Mountain Pasture which burned would allow recovery of residual desirable species without impacts from sheep and cattle grazing.

Soil erosion would increase in the short term as a result of loss of vegetation cover from the fire. Soil erosion rates would decrease as perennial and annual vegetation reestablishes ground cover of the site in years subsequent to the fires. Reestablishment and recovery of microbiotic crusts impacted by these and subsequent fires would be impaired by the increased dominance by exotic annual vegetation.

4.4.2 **Noxious weeds:** Failure to seed desirable perennial herbaceous species over much of the areas previously dominated by annual species would perpetuate the spread and increased dominance of noxious and other weedy species, resulting in the need for increased control efforts in the future. Seed production of weeds and seed transport would be significant, limiting the success of natural recovery of remaining desirable perennial plants. The areas previously dominated by sagebrush and other desirable deep-rooted species would be susceptible to further invasion by noxious and weedy species. Lack of shrubs would leave the area susceptible to invasion by rush skeletonweed and other species dependent on mid summer and fall deep soil moisture. These areas dominated by annual vegetation would continue to decline in seral condition as they lose remaining native perennial vegetation, especially with more frequent fire return to these fire prone vegetation communities.

4.4.3 **Livestock Grazing:** Livestock would be excluded from burned portions through at least two growing seasons and until desirable species have recovered from fire impacts, comprising approximately less than two percent of Canyon Field and Double Mountain Pasture. Impacts would be as identified in the proposed alternative.

In the short term, forage production would return to prefire levels with a dominance by annuals although with increased dominance of annual and weedy species over time, productivity and stability of forage production would decline.

4.4.4 **Wildlife:** Habitat values for mule deer, pronghorn antelope, and sagebrush dependent species would be decreased as compared to prefire vegetation community which included moderate stands of desirable native perennials and shrubs. Timing, season, and intensity of big game depredation on private crop lands adjacent to the burned area would be expected to increase as animals chose forage sources as well as thermal and hiding cover.

4.4.5 **Recreation and Visual Resources:** Impacts to dispersed recreation activities would be insignificant. In the event that fencing activities occur during game hunting seasons, any game species close to the activities would be temporarily disturbed.

Visual resources within and adjacent to the proposed action would be changed from prefire conditions with shrub cover removed by the two 2002 fires. Evidence of these fires would persist long term with slow recover of sagebrush cover from natural regeneration.

4.4.6 **Cultural Resources:** A Class III cultural resources survey would be conducted prior to temporary fence construction. Recorded sites would be avoided as appropriate. A survey for paleo resources would also be conducted prior to surface disturbing activities. Paleo resources located, depending on the nature and extent of the fossil locality, would also be appropriately protected during fence construction.

4.4.7 **Special Status Plants:** Special Status plant species would not be affected since no activity is planned within known habitats. In the event habitats or plants are discovered during temporary fence construction, mitigation actions would be implemented to avoid impacts which would contribute for the need for listing.

4.5 **No Action Alternative:** Consequences of implementing the no action alternative, exclusion of livestock from the 21,528 acre Canyon Field and the 12,665 acre Double Mountain Pasture as required by policy, would result as summarized in the following sections.

4.5.1 **Vegetation, Soils and Watersheds:** Annual species and noxious weed species would increase dominance of many sites within the burn with a mat of cheatgrass and other annual species seed. The potential for invasion of these sites by noxious weeds would increase with

dependence on recovery of fire impacted native perennial species, especially in the event of poor soil moisture during the 2003 growing season. Potential for repeated wildfire spread would be increase with increased dominance by annual species. The cumulative effects of past and future wildfire adjacent to this burn would cause a continued loss of vegetative diversity and structure which would accelerate with no action.

Temporary exclusion of livestock from Canyon Field and Double Mountain Pasture would enhance opportunities for recovery of residual desirable species without impacts from sheep and cattle grazing.

4.5.2 **Noxious weeds:** Many sites would be susceptible to increased dominance by noxious weeds found adjacent to the areas burned. Medusahead is a competitive annual species with little forage value and the ability to further limit potential for successful seeding of desirable species once established. Scotch thistle, rush skeletonweed, and whitetop are aggressive and highly invasive species. With reduced competition from desirable perennial grasses and shrubs, these weeds may dominate the burn areas and adjacent rangeland in the long term. Limiting weed inventory to prefire levels would delay the timely treatment to prevent the spread and invasion of weed species into niches opened by the Double Mountain and Twin Butte fires.

4.5.3 **Livestock Grazing:** Livestock would not be allowed to graze the burn area through two growing seasons as required by BLM policy. Short term exclusion of livestock from Canyon Field and Double Mountain Pasture to provide opportunities for recovery of fire impacted native perennial species would result in the loss of an estimated 896 AUM's for cattle use and 72 AUM's for sheep use annually within Canyon Field. Similarly it would result in the loss of an estimated 1766 AUM's for cattle use and 51 AUM's for sheep use annually within Double Mountain Pasture. Long term benefits to livestock production potential would not be realized as the density of desirable perennial vegetation would not increase and likely would continue to decline with more frequent fire.

4.5.4 **Wildlife:** Wildlife habitat and forage quality for big game and sagebrush dependent species would not improve. The loss of shrub habitat which occurred as a result of the 2002 fires and previous fires would negatively impact big game and sagebrush dependent species over the long term as Wyoming big sagebrush is slow to reestablish within the 10 inch precipitation zone following fire. Depredation of adjacent private croplands by big game species would increase and be redirected as travel corridors of animals change.

4.5.5 **Recreation and Visual Resources:** The return of game species for hunting may be somewhat delayed. Increased dominance by undesirable annual and weed species would hinder efforts to improve game species habitat in the burned area.

Preferred perennial vegetation would not be restored in the short nor long term with the exception of those vegetation communities which would recover with protection from livestock grazing. There would be a significant delay in returning the area to the prefire visual setting including moderate shrub cover dispersed within grass dominated vegetation communities. Increased risk of fire spread with greater annual species dominance would further limit potential for return to the diverse visual setting.

4.5.6 **Cultural Resources:** There would be no effect to cultural resources from mechanized equipment as a result of the limited rehabilitation alternative, however surface disturbance may be greater long term from livestock trampling and erosional factors with declining perennial vegetation to provide surface stability. Similarly, there would be no effect to fossil resources as a result of rehabilitation actions; however, unauthorized collection and surface disturbance from livestock trampling and erosional factors may increase without vegetation to provide surface stability.

4.5.7 **Special Status Plants:** No special status species or their habitat would be directly affected. However, as the area may be invaded by increasing numbers of noxious weeds, a much larger source of undesirable seed would be available for invasion into the nearby special status plant species habitat. Similarly, an increased dominance by annual species would increase fine fuel loading and the risk of larger future fires, thereby affecting nearby special status plant habitat.

4.6 **Adverse Effects:** Unavoidable adverse effects from implementation of the proposed action, nonnative seeding, limited rehabilitation or no action alternative are limited to those impacts to soil and vegetation function described in the text above.

4.5 **Short-term and Long-term Impacts:** Short-term impacts to soil and vegetation resources during seeding operations and construction and removal of approximately 5.25 miles of temporary fence would be offset by long-term benefits to upland vegetation community function consistent with standards for rangeland health and guidelines for livestock management. Long-term control of the spread and introduction of noxious weed species would also occur with increased inventory and treatment. Long-term benefits resulting from the reduction of fine fuels of annual species would limit spread of future fire in the burned and adjacent areas.

4.6 **Irreversible or Irretrievable Commitment of Resources:** In the event of limited soil moisture for seeding establishment in the spring of 2003 or other causes of poor seeding establishment, no irreversible or irretrievable loss of resources would be committed since annual species would return to provide vegetation cover to the site. Similarly, should the proposed fence not function as expected to protect recovering vegetation resources or should it have unforseen negative impacts, it could be removed or redesigned with no irreversible or irretrievable commitment of resources.

5 **List of Preparers/Reviewers:**

Steve Christensen	Rangeland Management Specialist
Ron Rembowski	Rangeland Management Specialist
Mitch Thomas	Rangeland Management Specialist
Tom Hilken	Rangeland Management Specialist;
"	Planning and Environmental Coordinator
Jim Johnson	Wild Horse Specialist
Bob Alward	Outdoor Recreation Planner, Wilderness
Jean Findley	Botanist
Diane Pritchard	Archaeologist
Shaney Rockefeller	Hydrologist/Soil Scientist
Al Bammann	Wildlife Biologist
Cynthia Tait	Fisheries Biologist
Lynne Silva	Range Technician, Weeds
Jon Freeman	Realty Specialist
Tom Dabbs	Acting Field Manager, Malheur Resource Area

6 **List of Agencies, Organizations, and Persons to Whom Copies of the EA are Sent:**

Livestock operators; Sourdough and Dry Creek allotments
Hal Shepherd (Northwest Environmental Defense Center); Interested Public
Jon Marvel (Western Watersheds); Interested Public
Walt Van Dyke, Oregon Department of Fish and Wildlife
Albert Teeman, Tribal Chairperson, Burns Paiute Tribe
Edward Potaws, Chairman, Confederated Tribes of the Umatilla Reservation

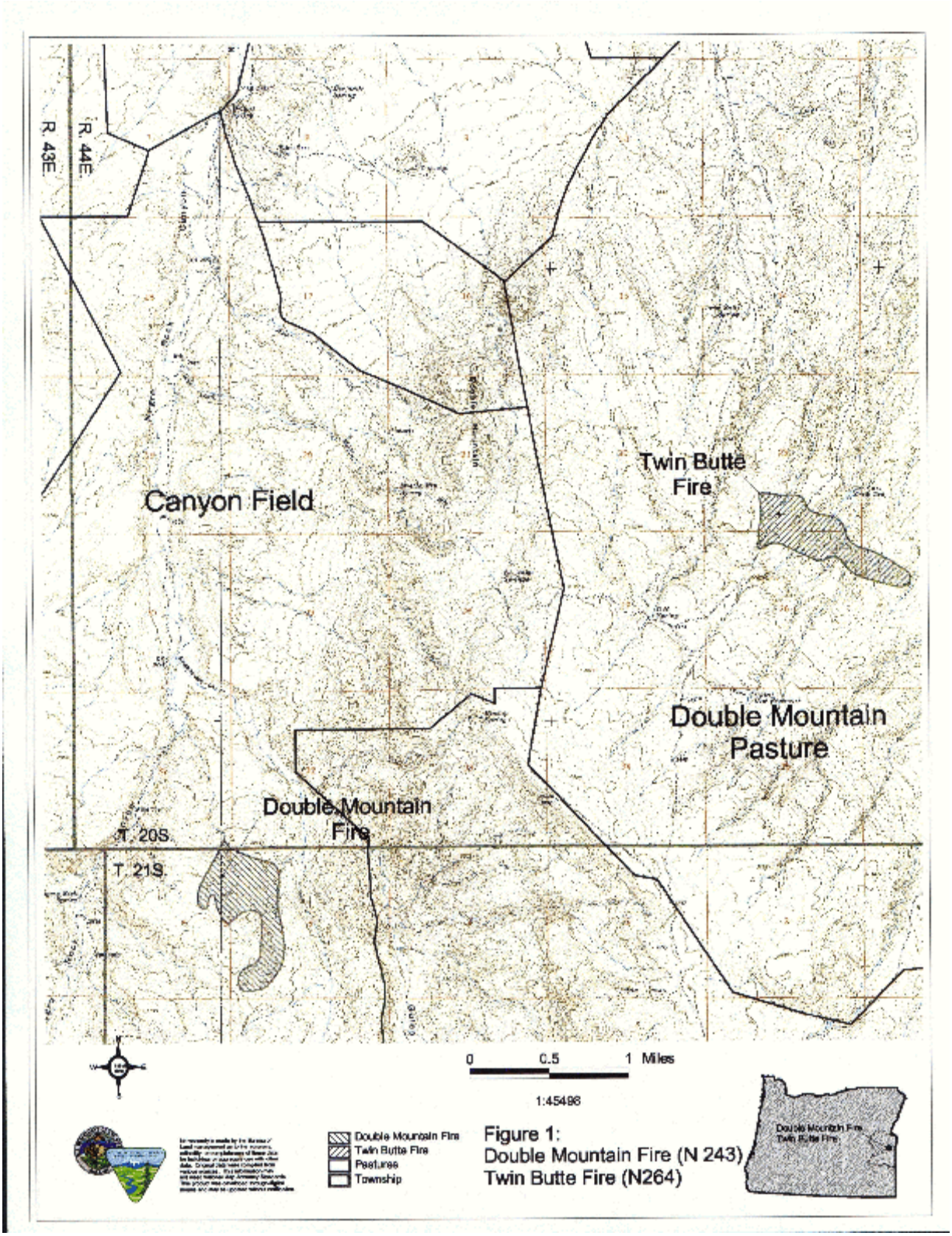
A file search completed August 20,2002, identified no additional requests by members of the public to be considered an interested public for Sourdough or Dry Creek allotments.

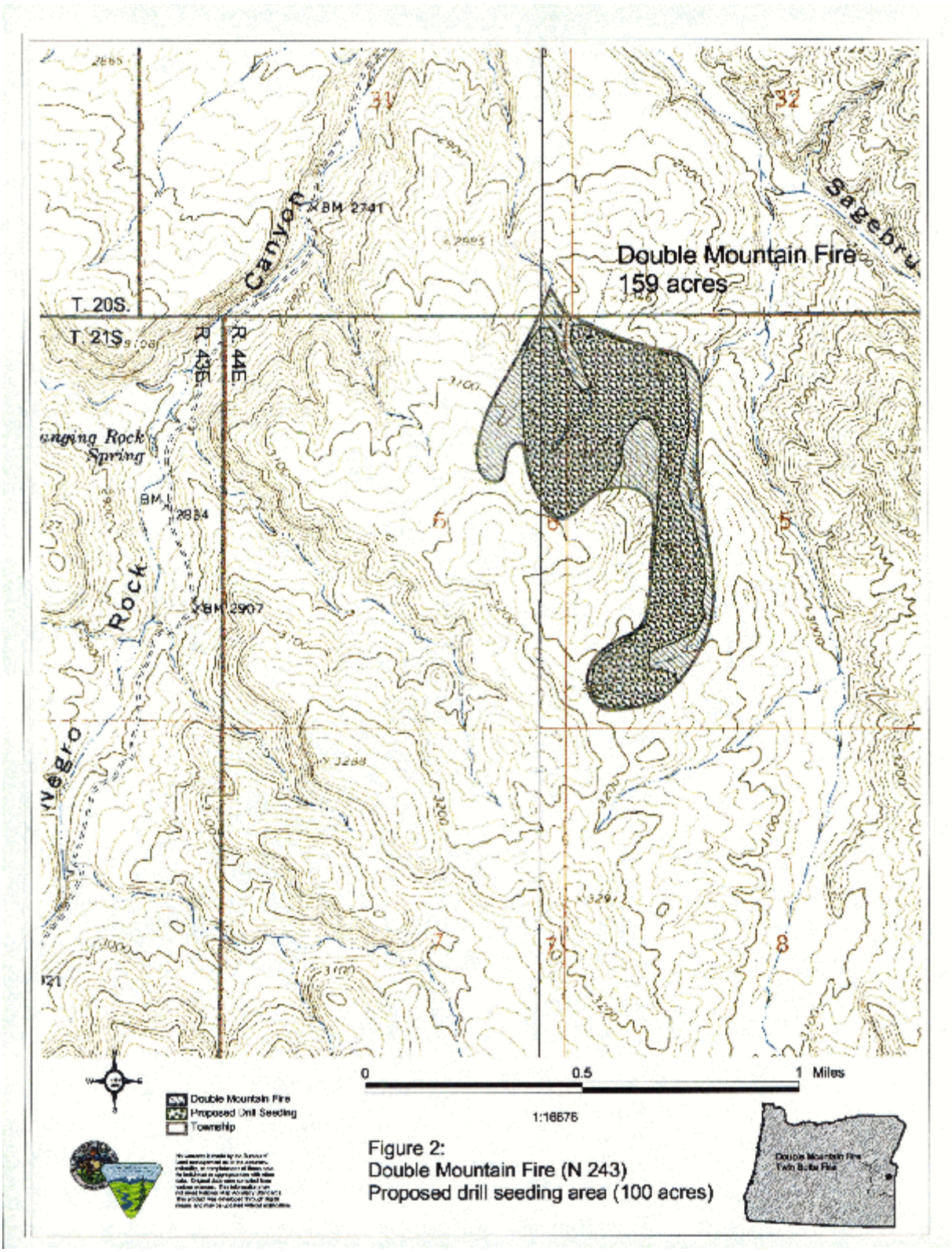
7 **Literature Cited:**

USDI-BLM 1984. Southern Malheur Rangeland Program Summary (RPS). U.S. Bureau of Land Management, Vale District, Oregon. 24 p.

USDI-BLM 1994. Decision Record for the Noxious Weed Control Program for Vale District. U.S. Bureau of Land Management, Vale District, Oregon.

USDI-BLM. 2000. Proposed Southeastern Oregon Resource Management Plan and Final Environmental Impact Statement (April 2001). U.S. Bureau of Land Management, Vale District, Oregon. 3 v.


R. 43E.
R. 44E.
Canyon Field
Twin Butte Fire
Double Mountain Pasture
Double Mountain Fire
T. 20S.
T. 21S.
0
0.5
1 Miles
1:45496
Double Mountain Fire
Twin Butte Fire
Pastures
Township
Figure 1:
Double Mountain Fire (N 243)
Twin Butte Fire (N264)


Double Mountain Fire
159 acres
T. 20S.
T 21S
R. 43E
R. 44E
Canyon
Rock
Spring
BM 2741
BM 2834
BM 2907
Sagebru
31
32
6
5
7
8
0
0.5
1 Miles
1:16675
Double Mountain Fire
Proposed Drill Seeding
Township
Figure 2:
Double Mountain Fire (N 243)
Proposed drill seeding area (100 acres)

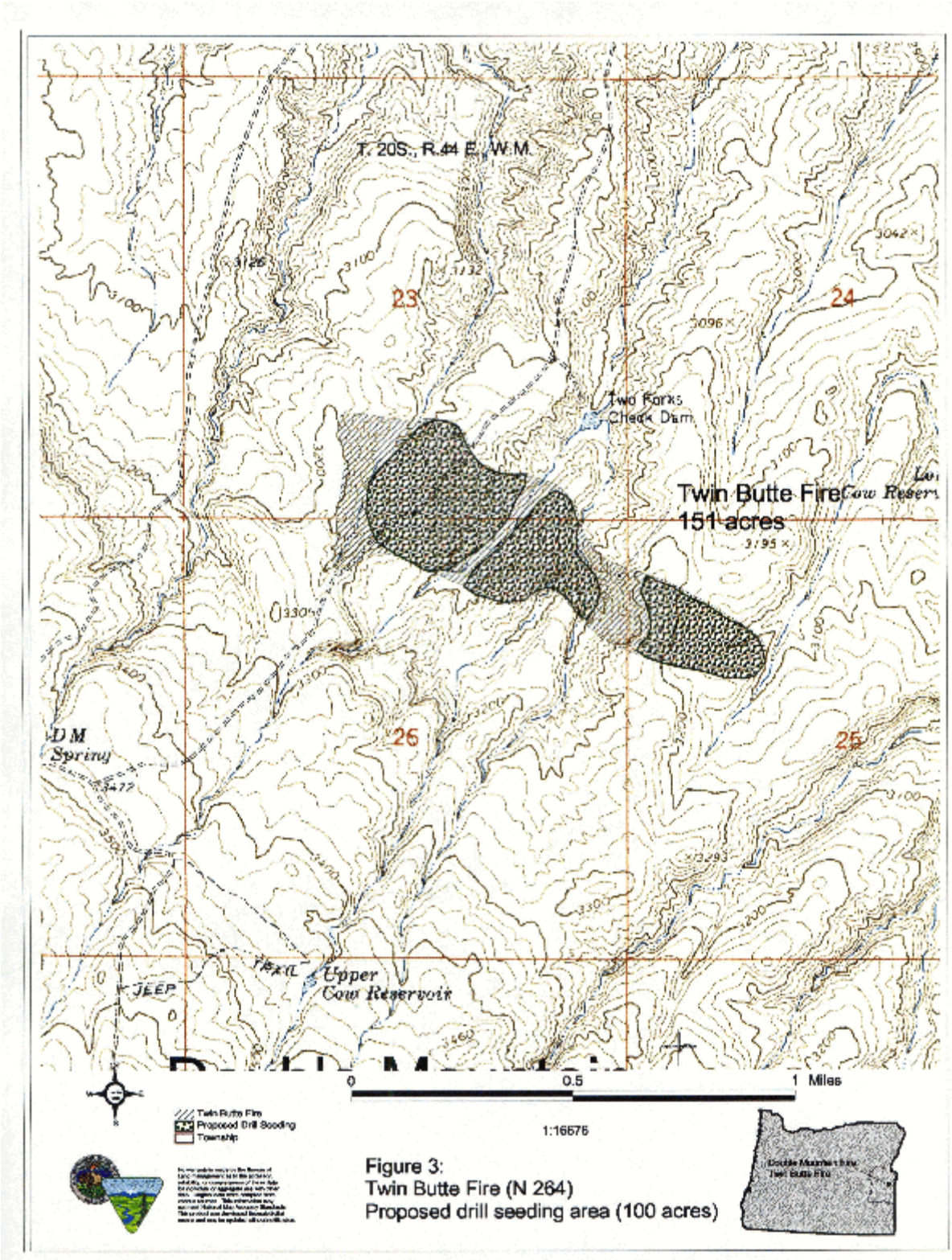


Figure 3:
Twin Butte Fire (N 264)
Proposed drill seeding area (100 acres)

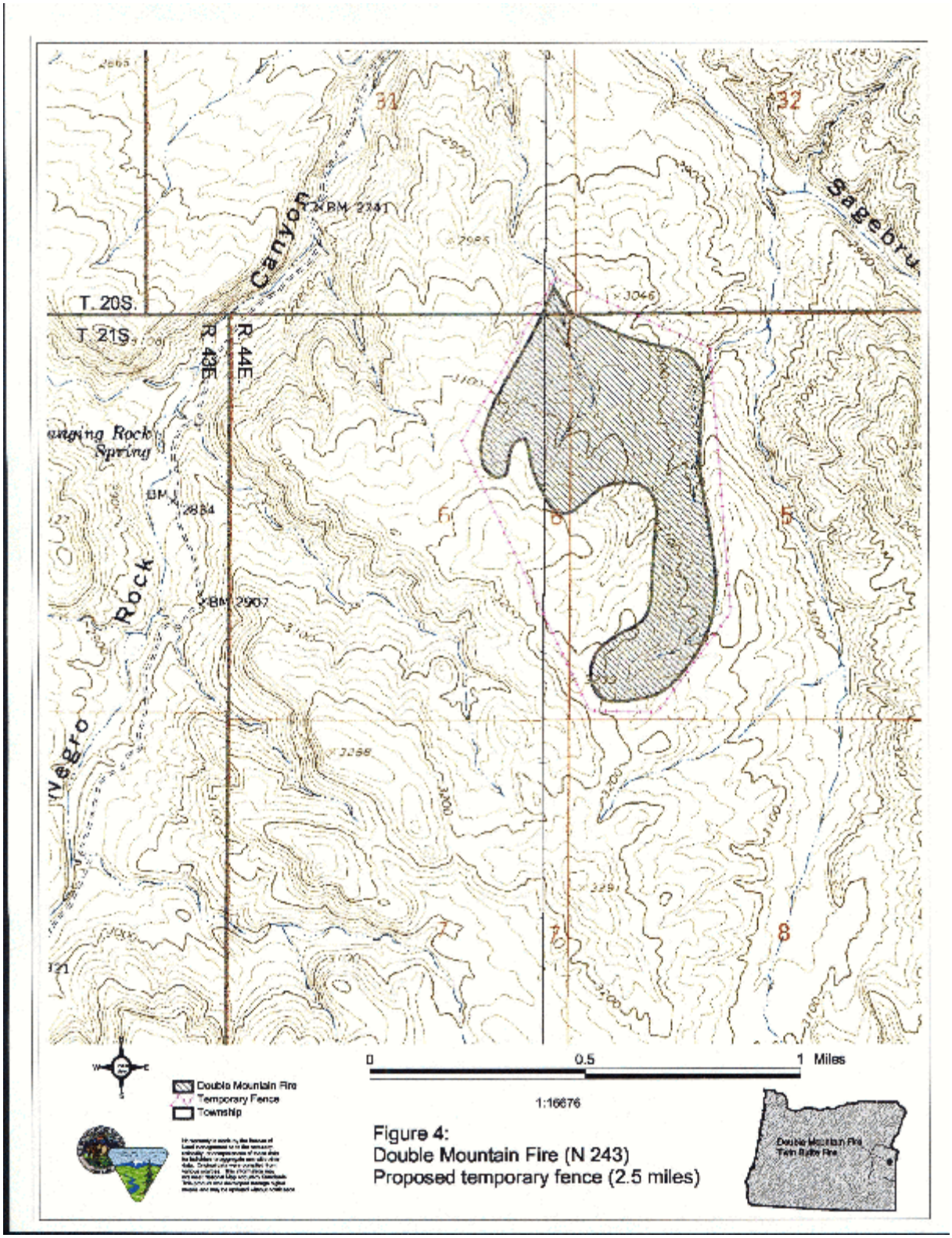


Figure 4:
Double Mountain Fire (N 243)
Proposed temporary fence (2.5 miles)

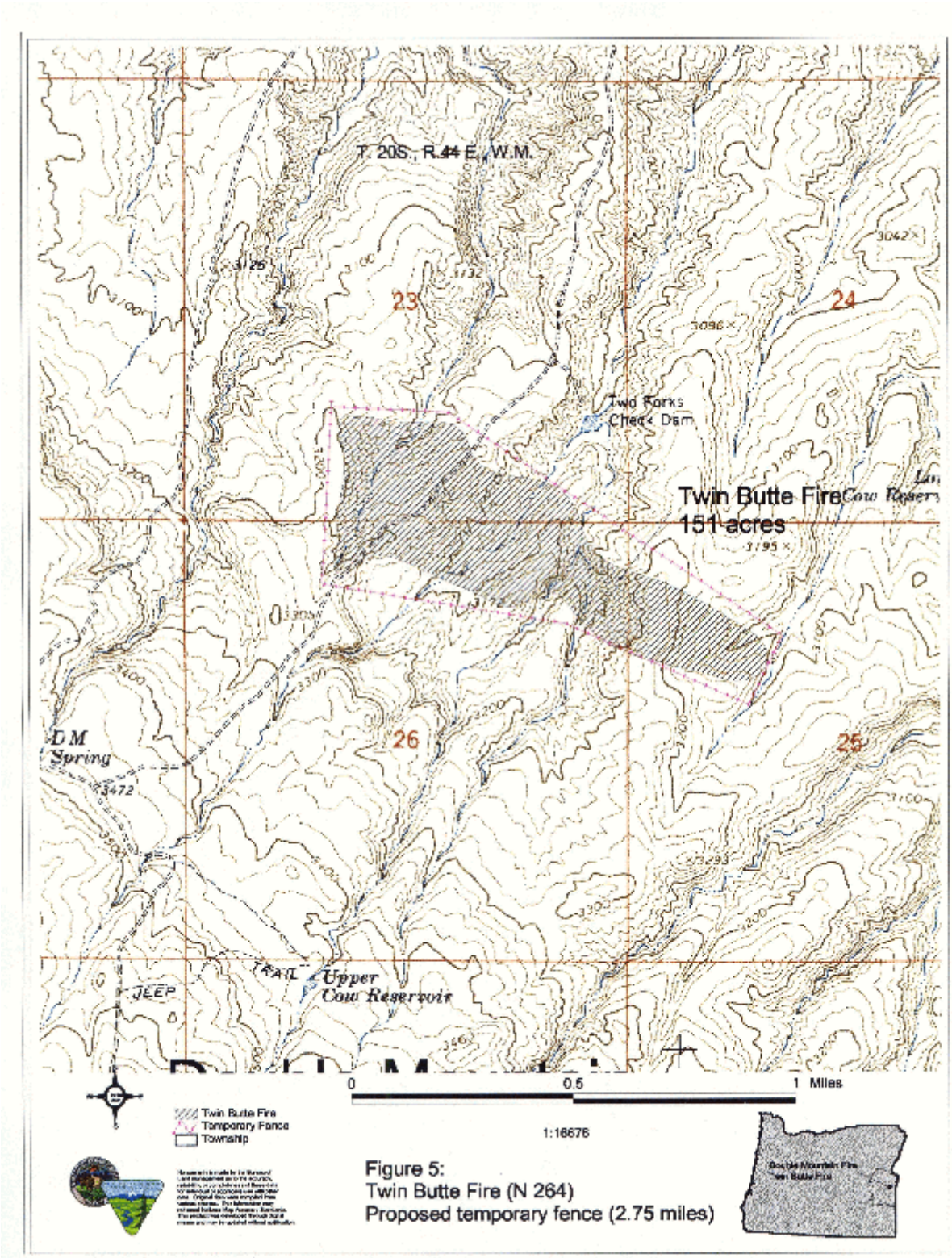


Figure 5:
Twin Butte Fire (N 264)
Proposed temporary fence (2.75 miles)